

REMARKS

Preliminary Matters:

Applicants thank the Examiner for considering the Information Disclosure Statements filed on June 7 and September 11, 2006.

Specification:

The Examiner objects to the Abstract of the Disclosure due to legal phraseology, i.e., “means” and “comprises”. Applicants submit herewith a new Abstract of the Disclosure.

Disposition of Claims:

Claims 1-12 are all the claims pending in the application. Of these claims, claims 1-6, 9 and 10 are rejected; claims 7 and 8 are objected to; and claims 11 and 12 are withdrawn from consideration. Claim 1 has been amended and new claims 13-15 have been added. Claim 13 correspond in scope to claim 1 (unamended) + claim 7 and claim 14 corresponds to claim 8, but depending on new claim 13.

Claim Rejections Under 35 U.S.C. § 102:

Claims 1-6, 9 and 10 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Conrad (Figs. 1-3).

As an initial matter, Applicants wish to thank the Examiner for acknowledgement of the allowability of claims 7 and 8 if rewritten. In view of this, it is submitted that claims 13 and 14 should be allowable.

However, Applicants believe that the subject-matter of present claim 1 is novel and non-obvious over the prior art of Conrad for at least the following reasons.

As is clearly stated in Conrad, the mixing chamber (vortex chamber) 12 is separate from the impingement zones A and B, cf. for instance col. 3, lines 16 to 19 (“...impingement member 48...upstream end which forms...impingement surface 52 facing the vortex chamber 12...”), and col. 3, line 62 to col. 4, line 6 (“Gas...is introduced...liquid...is axially introduced...and is mixed with the gas in chamber 12...This swirling mixture then passes through primary impingement zone A...”). Furthermore, it is clear that impingement member 48 is only present in impingement zones A and B, whereas there is no impingement member or other element that could be interpreted as a center body corresponding to that of the present invention in the vortex chamber 12 itself.

Notwithstanding the above argumentation, Applicants submit that the following clarification to claim 1 overcome the rejections of the Examiner:

1. 1. A nozzle for atomising a liquid by means of a gas, comprising a mixing chamber (1) extending between an upstream end and a downstream end, at least one liquid inlet (6c) and at least one tangential gas inlet (5) to said mixing chamber, and an outlet (4) positioned at the downstream end of said mixing chamber (1), wherein a centre body (2) having a generally converging configuration, seen in the flow direction, is provided in the mixing chamber (1), said centre body being rotationally symmetrical in the mixing chamber and extending from an upstream end to the outlet or out through the outlet, and that said at least one liquid inlet (6c) is positioned at or near the upstream end of said mixing chamber (1) and in the upstream direction with respect to said at least one gas inlet (5).

By this amendment, it should be clear that it is a prerequisite to the present invention as recited in claim 1 that the centre body in fact extends throughout the mixing chamber. This is in clear contradistinction to Conrad, where no center body at all is present in the mixing chamber, let alone one extending throughout the mixing chamber.

The above-identified differences between the invention and the nozzle according to Conrad entail a number of advantages, such as a better mixing, an undisturbed flow in the outlet (hence no impingement), and a lower span (cf. paragraph [0010] of the published U.S. application).

Thus, it is submitted that claim 1 and its dependent claims are allowable.

With respect to new claim 15, it is submitted that the prior art does not teach or suggest this aspect of the invention as well.

Conclusion:

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: October 7, 2009